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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/746,739	12/22/2000	Matthew B. Dubin	H17-25994	6889
128	7590	07/27/2005	EXAMINER	
HONEYWELL INTERNATIONAL INC. 101 COLUMBIA ROAD P O BOX 2245 MORRISTOWN, NJ 07962-2245			KIM, RICHARD H	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/746,739

Applicant(s)

DUBIN ET AL.

Examiner

Richard H. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16, 19-30, 33-37, 39 and 40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 19-30, 33-37, 39 and 40 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 2-4, 6-10, 12-14, 22-23, 27-29, 36 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Steffensmeier (US 6,540,363).

As to claims 1 and 37, Steffensmeier discloses a plurality of display devices, wherein each display device is subdivided into a plurality of sections (12a, 10b, 10c, 14a, 14b, 14c), with each section configured to display a sectional image (Fig. 1, ref. 30a, 30b, 30c), each display device including a dead-band region between each pair of adjacent sections (area between display devices 30a, 30b, 30c); a screen (S); and a plurality of lens assemblies (14a, 14b, 14c), wherein each lens assemblies is optically coupled to a corresponding one of the second of each of the display devices to project the sectional image display on that section onto the screen, and

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the plurality of lens assemblies are configured to merge the projected images to form a single tiled image (col. 1, lines 45-50), at least one lens assembly is configured to provide magnification having a magnitude greater than one such that the respective projected section image on the screen is larger than the corresponding section image on the display device (Fig. 1) wherein the lens assemblies provide magnification to merge adjacent projected section images together to eliminate the dead-band regions from the tiled image (30a, 30b, 30c).

Referring to claims 2-4, Steffensmeier discloses that each display device consists of liquid crystal display modules (20a, b, c) fluorescent display tube (17), and rear projection displays.

Referring to claims 6-10, Steffensmeier discloses the screen comprises a rear projection screen (S) having a rear side and a front side, and wherein the sectional (portions) images are projected on the rear side (col. 2, lines 22-37) and the tiled image (whole) is viewable from the front side (Fig. 1), each of the lens assemblies (14) includes a projection lens (21,22) for projecting the respective partial image onto the screen and they appear symmetric (Fig. 1). The lens assemblies (14) may include one or more individual lenses, hence a doublet or triplet (col. 3, lines 23-25).

As to claims 12-14, Steffensmeier discloses that each lens assembly (14) also includes a bi-power lens (col. 3, lines 25) for focusing the respective sectional image onto the respective projection lens (14) and the projection lens of each lens assembly has an optical axis and the field lens of each lens assembly has the same optical axis (Fig. 1) (draw as a line through the center). In Fig. 3, Steffensmeier shows the optical axis of the projection lens (14c) is oriented

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horizontal and the optical axis of the field lens is oriented in the vertical direction thus making the two axes different.

As to claims 22-23, and 27, Steffensmeier discloses a plurality of backlight (17), each backlight assembly optically coupled to one of the display devices (Fig. 2), and each backlight channel is configured to provide a separate backlight for on the sections of the corresponding display device (Fig. 2).

As to claims 28-29 and 36, since a device cannot be manufactured without a method and since the method claims as recited do not contain any specific sequence of steps or any unique combination of steps; the method of generating a tiled display is inherent in the disclosure of Steffensmeier.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5, 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steffensmeier in view of Itoh et al. (US 6,337,724).

Steffensmeier do not disclose that the display device is a CRT display nor does he disclose the backlight channel includes a fiber bundle.

Itoh in disclosing a conventional art of a tiled display apparatus (500) discloses CRT display (Fig. 28), the backlight assemblies (50) includes condenser (31) for concentrating light

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received from a light source onto the section and each backlight channel includes a fiber bundle (52).

The examiner has considered the Applicant's argument regarding Itoh, but in view of these specific claims, these arguments are moot because the use of fiber bundles to couple light in the backlight assembly is quite common in these systems.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the specific configuration as disclosed by Itoh to the device of Steffensmeier to provide an image display system wherein a large-scale image can be generated and thin enough to be utilized in a room at a house which is light weight and cost effective (col. 3, lines 25-43).

5. Claims 11, 15-16 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steffensmeier in view of Sheridan (US 5,777,782).

Steffensmeier does not disclose the use of ball lenses or plastic lenses. Sheridan on the other hand, in disclosing a display system discloses the use of plastic ball type lenses (21) and an array of these lenses (Fig. 2).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the plastic ball lenses for lightweight, flexible display (col. 1, lines 60-64).

6. Claims 19-21, 33-35 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steffensmeier and Clarke, in view of Schwarzenberger (US 6,128,054).

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Steffensmeier do not disclose the shifting of the image by the lens assembly.

Scharzenberger on the other hand, in disclosing an apparatus for display an image discloses the arrays shift the given parts of the display area to form a viewable image of the whole display area in which gaps between the neighboring parts of the image are less visible (abstract).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the specific configuration disclosed by Schwarzenberger to the device disclosed by Steffensmeier and Clarke so that the gaps between the neighboring parts of the image are less visible than the gaps between neighboring parts of the display area (abstract).

7. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Steffensmeier in view of Zimmerman et al. (US 5,598,281).

Steffensmeier does not disclose tapered light pipes for communicating light from a light source onto the section.

Zimmerman discloses such tapered optical elements (30) for a backlight assembly used in display devices.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the tapered optical elements (pipes) as disclosed by Zimmerman for an improved light/optical arrangement which provides an efficient, bright and uniform image of high contrast and is capable of being viewed over a wide viewing angle, while maintaining a narrow profile (col. 1, lines 56-60).

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Response to Arguments

8. Applicant's arguments filed 3/10/05 have been fully considered but they are not persuasive.

9. It is the Examiner's position that Steffensmeier discloses the amended claimed limitations according to the rejection above.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard H. Kim whose telephone number is (571)272-2294. The examiner can normally be reached on 9:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard H Kim
Examiner
Art Unit 2871


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